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Foreign Miscellany.

AN ESSAY ON THE PAST AND PRESENT STATE OF FORTIFICATIONS IN EUROPE.*

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Having, in the two preceding articles, endeavored to show what was the state of fortification in Europe up to the era of Cormontaingne and the school of Mezières, we now proceed to take a view of the still more modern ameliorations which have been proposed during the interval elapsed between that time and the present. In thus glancing at the existing condition of defensive constructions, we shall find it more expedient to take the influential writers in the order of succession in which their principal works appeared, than to attempt an arrangement in reference merely to their respective merits; since on the latter subject so much difference of opinion may exist. Fortification, much of which may be said to rest upon false principles, is not by any means to be considered an exact science; and there are few systems, or modifications of them either, which have not been in turn the subjects of warm panegyric or strong animadversion.

Marc René, Marquis de Montalembert, whose earliest publication is dated 1776, stands first in the series which we have thus prescribed for ourselves, and is by many considered to have effected a perfect revolution in the art. Without going quite its length, there is yet abundant evidence, in Germany especially, of most material changes having been wrought by his suggestions.

Montalembert had seen much service, having made the campaigns of Italy, Flanders, the Rhine, Westphalia, Bohemia, Silesia, Brandenburg, and Bavaria. These gave him opportunities of being present at fifteen general actions and nine sieges, and of examining a great part of the European fortresses; nevertheless, being only a captain of light cavalry, he was at first strongly opposed by the officers of engineers, who asserted that Lachiche, one of their body, had already conceived the idea of a system of defence, based upon the use of casemates with perpendicular fire; that, however his system may dazzle for a moment, it cannot bear the test of analysis; that he was unacquainted with the practical principles of fortification, and that his propositions, however ingenious, contain nothing to entitle them to the honor of superseding those of Vauban and Cormontaingne. It was further urged against him, that his casemates are scarcely tenable on account of the smoke; that his revetments are too weak; that the quantity of guns and stores necessary for the defence is enormous; and that the whole arrangement is too expensive.

Without discussing the claims of Lachiche to be the inventor of the casemated defences, which, after all, is of little moment, since casemates had long been employed, and would, in their arrangement, naturally follow the improvement consequent upon making the angle of defence ninety degrees; we, nevertheless, must observe that we cannot read the details of Landsberg's system without a conviction being forced upon our mind that therein Montalembert found the true origin of his own. Want of space prevented us from giving more than a mere outline of that Dutch engineer's method, but a closer examination shows too strong a resemblance to have been the result of mere accident. As Landsberg very candidly owns that his notions are derived from those of Spekel and Rimpler, who published respectively in 1589 and 1673, we really believe that, as far as originality is concerned, the Germans have the prior claim; and this circumstance has probably had its full share in rendering Montalembert so popular in that country.

As regards the objections of his countrymen, they have long since received a triumphant refutation in the adoption of his leading principles by Chasseloup de Laubat and Carnôt, two as superior men as the profession can boast of any where. It will also be seen that General Aster is at this very time applying them extensively in his splendid constructions upon the Rhine.

It is Montalembert's position, that the attack is superior to the defence, because the besieger possesses the power of bringing a greater number of guns to bear upon any given point than the garrison can possibly employ to oppose him, and can also search into every part of the works with his vertical fire. He proposes to himself, as a problem to be solved, the reversal of this condition, and infers that by the use of a tenailled construction, combined with an extensive use of casemates, he has so far turned the balance as to be able to meet his assailant, at every point of the approaches, with an overwhelming preponderance of fire.

Tracing the tenailles within a polygon of ninety yards' side, and making the re-entering angles each ninety degrees, he forms his *enciente* entirely of earth and without revetment. The ditch of the body of the place is dry, and is preceded by a loopholed wall for musketry, in front of which is a wet ditch covered by an earthen counterguard, the ditch before which is triangular in profile. Beyond the triangular ditch there is a line of casemates for cannon, and of loopholes for musketry, with a wet ditch in their front. Next, still towards the exterior, comes an-

* Continued from vol. 1, page 720.

other earthen counterguard, then a dry ditch with a loopholed wall, then a wet ditch, and lastly, the very narrow covered way and glacis. These defences are generally flanked by casemates, presenting more embrasure than there is room for the besieger to place in his opposite counter-batteries. They are divided into four stories; two for cannon and two for musketry, exclusively of the battery on the terreplien at the top. As reduits to the whole, he employs large towers within the body of the place, casemated for cannon and musketry.

Such, in brief, is an outline of this powerful system, which its author recommends, for the following reasons:

1st. It obliges the besieger to force a quadruple line of works, under great disadvantages, before he can penetrate into the place where the great towers receive the garrison, and give them time to make terms for themselves.

2d. The embrasures of the casemates are not seen by the besieger until he has effected a lodgment upon the work immediately in front, when he forthwith becomes exposed to an overwhelming fire.

3d. The casemated defences are perfectly secure against vertical, ricochet, and reverse fire, and the contest is therefore narrowed to a struggle between the direct fire on both sides; a struggle wherein the great number of guns, ready in battery on the part of the garrison, must inevitably have the superiority.

Viewed abstractly from its casemated defences, this system, with its numerous parallel lines, appears to be peculiarly open to enfilade; and it is probable that a well-directed attack would not leave one serviceable gun upon the terrepleins of the fronts attacked, at the period of the construction of third parallel. Supposing this to be the case, the garrison would have to trust to their casemates alone, of which Chasseloup de Laubat remarks: "Every casemate seen by the enemy is soon exposed to complete destruction, a circumstance to which M. de Montalembert has not paid sufficient attention."

The system of the Swedish General, Virgin, is often quoted in modern works; on which account, as well as his being the first proposer of casemates for mortars (an idea afterwards seized with so much eagerness by Carnôt and Chasseloup de Laubat,) a short notice of him may be acceptable. He wrote in 1781, and founded his principles upon the experience which he had acquired during seven years' service at the sieges in Holland about the middle of the last century. He was director of engineers in Sweden.

Taking the converse of the opinion usually entertained upon that point, he maintains that the great resources of the art are most profitably expended upon small places, and that large towns should be merely protected by earthen enclosures against a *coup-de-main*. He follows up this principle, and applies it to a system of bastions, which he prefers to that of tenailles, although he admits considerable merit in the latter. Thus he would make an immensely strong citadel of every third-rate place, occupying the whole interior of its works by shell proof barracks for the garrison. Each bastion is converted into a separate fort of great strength, completely detached from the rest of the works having, its defences equally strong on the interior as the exterior, requiring a separate attack after the others have fallen, and capable of containing in shell-proofs all requisite troops and matériel. He argues that the attack would lose its preponderance if deprived of the power of acting on the circumference of a circle, and concludes that this must be the result as soon as the besieger penetrates into the general enclosure, and, exposed in flank and rear to the fire of the other bastions, proceeds to the separate attack of each. He uses retrenched reduits in the saliant places of arms, which are intended to co-operate with cannon placed in the covert way, in protecting sorties, of which he warmly advocates the use. In order to cover the faces of the bastions from ricochet, he places high traverses, called bonnets, at the saliants, which are cut off in a direction perpendicular to the capital, so as to permit one gun to be placed on that line.

It strikes one forcibly that this mode of defence, although strong in itself, is little calculated to oppose that resistance to an invading army which, however, is the great aim and object of fortresses. The places which he selects in preference are not large enough to contain bodies of troops sufficiently numerous to act with effect upon the rear of a hostile force, which might consequently neglect them, and, marching upon the great towns or capital (left, according to Virgin's arrangement, with but feeble defences,) would from thence control the finances, and dictate to the governments of the provinces. Neither are they capacious enough to serve as great depots for artillery and engineer stores, &c., which must, therefore, be placed in the large towns, and would there fall a sacrifice to the first efforts of the invader. The idea of constructing each bastion of sufficient strength to take an independent part in the defence, we have already seen in Rimpler's, and has recently been taken up, with great ingenuity, by Choumara, who, together with Carnôt, Bousmard, and Chasseloup de Laubat, thinks favorably of the bonnet, or traverse, against ricochet at the saliants.

Not one of the many writers who have attempted the improvement of fortication is entitled to more attention than Bousmard; his work on the art of fortifying, taken together, is, we believe, recognised as the best in any language, and no one has shown more candor or good feeling in criticising the productions of others. An exile from France, his native land, and, as he pathetically describes himself, unknown, and without position in society, and without a country, he was at least exempted from the control of many influences and prejudices which might otherwise have warped his judgment. Hence a tone of cool independence pervades his book, which carries much conviction with it.

Bousmard adopts the tracing or ground-line of Vauban's first system, and begins by slightly curving the faces of the bastions, with the intention of securing them from ricochet. This certainly is not accomplished by the mere curvature, but, as the bend inclines considerably inwards towards the saliant, it causes that angle to be very obtuse; and thence

ensues the decided advantage of intercepting the prolongations of the faces of the bastions by the projection of the adjacent demilunes. It is true that this also takes place in Cormontaingne's system in polygons of forty sides and upwards, but Bousmard attains it in all above the octagon inclusive. As, in ordinary cases, the latter are far more likely to be employed than the former, it would seem that thus far the author has established a point of improvement.

In order to defend as much as possible of the main ditch from the flanks of the bastion, he curves the latter in a form convex towards the place. so as to throw forward their outer extremities. This he does not carry to such an extent as to trench seriously upon the interior of the bastion, but we already begin to experience the consequences which may infallibly be forseen wherever curved lines are adopted. Of all the guns in the flank, only one or two can fire upon the saliant angle; so that the besieger, arrived upon the breach, is no longer seen by the garrison. It is, however, to be admitted, as Bousmard himself, with much show of reason, argues, that more than half the guns of his flank have a good view of the passage of the ditch. This he esteems to be of far greater importance than if they were made to command the breach, contending that, when half way up it, the besieger is concealed from the best disposed flank by the profile of the ruined revetment; and that, when he is at the foot of it, he is not on that account to be considered also at the foot of the scarp-line, because the *débris* fall a considerable distance into the ditch.

He considers it an advantage to bring the crest of the glacis as near as possible to the body of the place, not only that the former may be more effectually defended by musketry, but that it may be easily reached by hand-grenades thrown from the latter. On this account he reduces the breadth of the main ditch from thirty yards to twenty yards, which he is able to do without rendering the ditch so narrow as to be filled up by the ruins of the breach, and without depressing the terreplien of the covert-way below the line of fire of the place. It is certain that in the late breaching experiments at Metz, the base of the rubbish brought down by the batteries, measured from the foot of the escarp along the bottom of the ditch, never amounted to twenty-five feet, after every means had been resorted to, by a horizontal fire of shells, to render it as level as possible.

In the covert-way the traverses are in form of a redan; one face looking towards the saliant place of arms, the other towards the glacis. They are casemated, and communicate under ground with a counterscarp gallery. The casemates are loopholed at the level of the ground; and, as their masonry rises only two feet above that level, they are but little exposed to ricochet, while their covered musketry is well adapted either to prevent a crowning by main force, or to increase the difficulty of that step by step. In short, they constitute so many sunken redoubts in the covert-way, their line of fire being on the level of its terreplien. Bousmard, who was so well acquainted with the minutest details of Coehorn's system, seems to have derived the idea of these traverses from the coffers in the places of arms of the latter.

The passages round the traverses, which it had hitherto been considered sufficient to make eight or ten feet broad, are enlarged to twenty-two feet, so that not only artillery can defile through them, but cavalry on a front of threes, and infantry on a front of ten or twelve men. Sorties can, therefore, be made in force from a great many points at once, and cannon can be used in safety from every part of the covered-way.

If the expense of these block-houses, of which there are ninety-six requisite for the octagon, be not objected to, it cannot be disputed that they increase the utility of the covert-way; in that of the bastions, especially, as the prolongation of their faces falls within the demilune.

We are aware of the objection that has been started on the score of smoke accumulating in such small casemates; but, as they communicate with the counterscarp gallery, there would probably be a sufficient draft of air through them with the aid of a funnel or two. Besides, as it is only the smoke of the priming which is, generally speaking, to be guarded against, it is likely that the use of detonating muskets will obviate this difficulty, and that arm seems well fitted for the defence of block-houses and loopholed galleries of all descriptions. If adopted for cannon, would not the same observation apply to artillery casemates and between-decks on board of ship?*

Passing now to the outworks, Bousmard proposes to restore the flanks of the tenaille, and to make that work higher than usual, in order to form a more effectual screen to the bastion and curtain. In connection with this view, he proposes that neither musketry nor artillery should be used from the terreplien of the flanks of the tenaille, but that they should be only considered as masks to that of the bastion. Beneath each of them, however, at shell-proof thickness, he provides for a casemate holding four guns, the mouths of the embrasures opening at the cordon of the escarp, so that they are nearly on a level with the terreplein of the covert-way. They are open to the rear in form of an arch; and are, consequently, not liable to fill with smoke.

When describing the casemated flanks of the old systems we took occasion to express a doubt whether they had not been somewhat too hastily abandoned by modern engineers. In this we find ourselves strengthened by the evident desire, both of Bousmard and of Chasseloup de Laubat, to obtain a second tier of fire, parallel to the flank of the bastion, and subordinate to that of its terreplein. Whether this be actually in the flank of the bastion, or in that of the tenaille, is perhaps not of material consequence. It seems possible, indeed, to use casemates from both, masking those of the former, until the very moment of need, by traverses of gabions on the roof of the casemates of the tenaille. It is evident that to something of this kind modern science is tending, impelled by the conviction that the uncovered guns on the flanks of the bastions will generally be silenced before

* A plan has been proposed for this purpose by Commander Henderson, R. N.

the occasion arises for which expressly they are prepared.

In the demilune an arrangement, never hitherto attempted, as far as I am acquainted, is introduced, that work being totally detached and placed at the foot of the glacis of the body of the place; by which disposition the besieger is to be prevented from breaching the body of the place from the saliant of the demilune, often noted as such a serious disadvantage in the systems of Vauban and Cormontaingne. There is a good reduit in the demilune; and Bousmard, apprehending that both works, separated as they are from the place by a glacis, are exposed to be carried in the rear by an attack simultaneous with the storming of the breach, protects their gorges by counterscarp loopholed galleries and palisading. He published in 1799.

Foremost among the distinguished and scientific men who surrounded Napoleon in the zenith of his fame was the General of Engineers, Chasseloup de Laubat. He first came into notice in 1792, when he voluntarily threw himself into Montmédi, then besieged by the Prussians, and, taking the command of the engineers, distinguished himself by a good defence. In the following year he was made lieutenant-colonel on the field of battle of Arlon, gained against the Austrians. In 1794 he directed the French attack upon Maëstricht, hastened its reduction by his judicious dispositions, and was rewarded with the rank of Colonel. In 1795 he was charged with the attack of Mayence; but, the siege being ultimately converted into a blockade, he joined the army of Italy in command of the engineers. In 1796 he was actively employed in throwing up field-works to support different points occupied by the French army, and afterwards conducted the attack upon Mantua. When that place surrendered, Bonaparte made him a brigadier-general. In 1797, by his preliminary reconnoissances, he paved the way for the advance of the French forces upon Vienna through the Tyrol, which led to the treaty of Léoben, by which the Rhine being thenceforth recognised as the boundary of the French empire, Chasseloup was immediately despatched with instructions to complete the defences of that frontier from Nimeguen to Mayence.

The campaign of 1799, although unfavorable to the French arms, nevertheless gave opportunities to Chasseloup of distinguishing himself, and the French Government marked its sense of his services by making him General of Division.

In 1800, the battle of Marengo having changed the face of affairs, Chasseloup followed it up by forming the siege of Peschiera; but on the tenth day from breaking ground, just as the breaching-batteries were about to open, the treaty of Treviso suspended hostilities.

The French, on a revisal of their defensive system in Italy, now determined upon adopting Genoa and the Apennines as their future base of operations; and with that view demolished the fortifications of Coni, Ceva, Tortona, Susa, Turin, and the castle of Milan. Genoa was to be the citadel, as it were, of this line; because an army stationed there could cut the communications of any hostile force attempting to penetrate through Piedmont into France; or, if attacked itself, could await in this strong position the arrival of succours to act upon the rear of its opponents. As points of support along this line, which extended from Genoa to the Adige, Chasseloup fortified the Rocca d'Anfo, Verona, and Legnago, which fully answered their intended purpose in 1805. He also strengthened the defences of the Adda, which, with Mantua, form a second line to those of the Adige; and then, as a sort of reduit to the defenders of both lines, Napoleon selected Alessandria, about half-way between the Adda and Genoa, leaving the plan and execution to Chasseloup. He accompanied Napoleon in the campaigns of Poland and Prussia, where he restored the defences of the Elbe, the Oder, and the Vistula, and commanded the engineers at the sieges of Dantzic, Colberg, and Stralsund. Returning to Paris and thence to Italy, his ambitious chief—who, however, knew how to discover and to reward merit—created him a count of the French Empire, with an ample hereditary endowment. The Milan edition of this officer's treatise is dated 1811.

Among other novel ideas, this writer has described two methods for the safe employment of cannon in casemates, one of which consists in machinery of a rather complicated nature, by means of which the gun, platform and all, is alternately swung up to the embrasure to be fired, and immediately afterwards lowered to be loaded. We fear that few officers of artillery will be disposed to look with much favor upon this plan. The other is, perhaps. more entitled to attention. It supposes the mouth of the embrasure to be exposed over the crest of an exterior parapet, (forming a mask,) but to be only two feet and a half high, and, consequently, difficult to strike. The guns are to be mounted on garrison carriages, raised as high towards the intrados of the casemate as is compatible with their being properly worked.

He is of opinion that a front of fortification should be six hundred yards in length, instead of three hundred and sixty, the established French dimension. Coëhorn had already led the way to this alteration by increasing the exterior side to four hundred and fifty yards. This change is not, however, applicable to all towns and situations; on which account, and foreseeing the probability of opposition, he recommends the following modification of the existing groundline, which contains most of the ideas which he would have applied upon a larger scale.

He detaches the demilune from the place in much the same manner as Bousmard has done, but denies to that engineer the merit of originality, affirming that a demilune so detached was already in course of construction, under his own directions, a year before Bousmard's work appeared. On the other hand Bousmard's book was published while Chasseloup's was yet in the press.

Taking into consideration the great increase of vertical fire on the part of the attack, he shows the necessity of surrounding places which contain a large population or important public establishments with a simple enceinte, intended only to serve as a last retreat, in which to capitulate; occupying the

strong points on the exterior by horn and crown-works, resting on the demilunes, and separated by a glacis from the body of the place and outworks. By this disposition, which, with some few differences, he executed at Alessandria, the besieger is forced to begin his operations at a distance, is deprived of all inducement to throw his shells and rockets into the town, and the bastions of the body of the place are secured from ricochet. The principle, both for its judiciousness and its humanity, deserves not to be forgotten.

The inner extremity of the face of the demilune is rounded, so as to look towards and defend the face of the bastion. Between the demilune and its reduit is interposed a mask of earth, to prevent the latter work from being easily breached from or through the former.

In front of the tenaille is a central reduit, seeing in reverse the breach of the bastion; itself screened from the counter-batteries by a traverse in the covert-way, and by great care in the arrangement of the profiles of the adjacent glacis. When he works upon a front of six hundred yards he makes this a very large and important part of the defence, on which depends the whole flanking of the bastions. He owns that the idea is Montalembert's, and follows him in arming it with casemates.

He recommends that in every work should be prepared shell-proof sheds, under which the artillery are to be kept secure when not wanted, and only placed in battery as occasion may require.

At points where the escarp is liable to be breached he throws back the parapet, so as to leave a considerable space between it and the revetment, in order that, when the escarp is battered down, the parapet may still remain standing. He is likewise in favor of casemates for mortars, to throw shells upon the saliants of the bastions and demilunes; and of casemates for cannon in the direction of the capitals.

Like Bousmard, he constructs the tenaille with flanks, and, in common with him also, uses casemates in them; but, although the axes of the guns are on the same level as the covered-way, yet he does not intend them to take any share in opposing the besieger's lodgment there, or the construction of the counter-batteries. In order that they may not be silenced from the opposite crest of the glacis, the casemates are screened in front by a mask of earth and masonry, through which are small openings, cut in a direction sloping downwards; so that, while the embrasures themselves are hidden from the counter-batteries, they are, nevertheless, enabled to fire downwards, through the openings of the mask, upon the passage of the ditch. This is admitted to be very ingenious, but opinions are entertained that the counter-batteries, once established, (to which the fire of these flanks is no hindrance,) the openings in the mask would be choked up by rubbish detached from their upper portion, and that they would then obstruct the view of the embrasures behind.

The reader will perceive that both Bousmard and Chasseloup de Laubat altered the direction of the face of the bastion, to screen it from ricochet; that they both used the central reduit; that the tenaille with flanks containing casemates is met with in the system of each; that they both indent their covered way in a very remarkable manner; that they both separate the demilune by a glacis from the place; and that, lastly, the casemated reduits in the saliant places of arms of Chasseloup bear a strong resemblance, both in principle and design, to the casemated traverses of Bousmard. Viewing impartially all these striking points of resemblance, it is difficult to persuade ourselves that one or the other has not been a plagiarist. Involving, as it does, the character for candor of two distinguished officers, it would be a matter of curious interest to ascertain whether such were the case, and on whom the imputation ought to rest. On the one side, we may remind the reader of the perfect fairness with which Chasseloup has acknowledged his obligations to Montalembert, Turpin, and others; and of the indisputable fact that, a year previous to publication of Bousmard's work, a place with detached demilunes was already in course of construction, under Chasseloup's own inspection. Further, Bousmard was a Frenchman, and an officer of engineers; and it is far from improbable that he found means to maintain a correspondence with his native country, although an exile from it. Supposing this to be the case, he might have received regular accounts of the improvements going on in France, and have felt himself under no restriction in publishing them, except so far as that a fear of compromising his informant would deter him from openly acknowledging the quarter from whence his knowledge was derived.

Reversing the case, and supposing Bousmard to have been the original inventor, and to have communicated his ideas to a correspondent in France, that person would scarcely have ventured to make them known as Bousmard's, and reveal thereby his clandestine intercourse with an officer in a foreign service; or, on the other hand, had he put them forward as his own, it is fair to suppose that Chasseloup would have admitted it in that case as in so many others. On Bousmard's side, we are to remember that he was a political exile; that he served a power at war with France; and that many of his countrymen did not hesitate on that account to pronounce him a person with whom no measures need be preserved. Further, Bousmard himself informs us, in his fourth volume, that in the hurry of his departure from France he left some important memoirs upon shell-proofs in the depot of fortifications at Paris. Altogether it is a case of singular coincidence, but we are without data to form a correct conclusion. It may be just possible that the progress of science among the French engineers had been gradually pointing towards these improvements, and that Bousmard and Chasseloup, both members of that body, merely gave development to them about the same time.

Alessandria was rendered an exceedingly strong place under the direction of Chasseloup de Laubat. Its defences in 1803 consisted of a good citadel, and of an old and weak enceinte. Being situated between the Tanaro and the Bormida, Chasseloup availed himself beautifully of those rivers to cover a great

portion of his works by extensive inundations, under the control of the garrison; the fortifications defending both rivers, while they, at same time, received protection from them. Advanced works of the great strength kept an enemy at distance from the town. Exit was prepared for the most extensive sorties; obstacles in the way of the attack were multiplied, and an assailant would have been obliged to undertake three separate sieges to render himself complete master of the place. As a monument of this engineer's skill, as well as a most interesting study of the art, it is equally to be regretted that the Austrian arrangements for holding Northern Italy have caused this fine fortress to be dismantled.

In 1810 appeared Carnôt's famous treatise, written by Napoleon's command, and avowedly ushered into notice under his powerful sanction. Already foreseeing that a serious reverse upon any part of the vast line which he occupied might combine all Europe against him, the French Emperor made every effort to establish successive lines of fortresses, behind which his beaten armies might rally, and await the arrival of reinforcements or the results of one of his own electrifying victories. The success of such a plan would materially depend upon the greater or less obstinacy which characterised the defences. Carnôt's system is partly a consequence of these views of his master's, and may be regarded in a great measure as a political scheme to render the duration of sieges as protracted as possible, without any very particular regard being had, either to the safety of the inhabitants or the ultimate escape of the garrison.

He sets out with the principle, which no military man will be disposed to dispute in the abstract, that every soldier ought to die rather than give up his post, and that the courage and perseverance of the garrison are the strongest bulwarks of a fortress.

It has already been seen that Chasseloup de Laubat adopted one of Montalembert's tracings. Carnôt likewise espoused the cause of this decried innovator, and deserves credit for the freedom from prejudice which led him to do so. He is of opinion that the tenaille system is most applicable to situations where water rises at depths varying from twelve to eighteen feet, but that in other localities the bastion system is preferable. In both cases there is to be a general couvreface or counterguard surrounding the other works, with a glacis in its front sloping *towards* the place down to the bottom of the ditch, instead of towards the country, and the covert-way is done away with as consequently unnecessary.

Carnôt speaks favorably of covering the scarp-line, under particular circumstances, in order to avoid ricochet. He gives interesting and exciting accounts of several desperate defences, deducing from them corresponding brilliant results, and contrasting them with others wherein the governors had shown a want of courage, and had expiated their misconduct on the scaffold.

Ever keeping in view the national character of his countrymen, who are said to rejoice in a furious onset, he provides, by means of his countersloping glacis, abundant egress for sudden sorties in great force, which are to begin as soon as the besieger has reached his third parallel, or about one hundred yards from the place. If the sortie be more numerous or more courageous than the guard of the trenches, the latter will be driven off, and the works of the attack be levelled or destroyed. This is to be repeated as often as fresh work invites to its destruction, or until the besiegers collect such a guard in or near the third parallel as to out number considerably the largest force which the garrison can assemble for a sortie. Now this will oblige the attacking party to crowd great bodies of men into the narrow extent of ground occupied by the third parallel, which is one of the chief objects aimed at by these furious sorties, for it is to be a signal for the commencement of a vertical fire of four-ounce balls and stones, the destructive effects of which he estimates in the following manner.

He supposes a garrison of 4,000 men and a besieging army of 20,000. The well-known approximative rule for such cases gives a corresponding guard of the trenches of 3,000 men. He likewise calculates ten days as the period which would probably elapse between the digging of the third parallel and the breaches becoming practicable. The area occupied by the adversary's troops, in the neighborhood of the third parallel, would be at most 60,000 square yards, which, divided by 3,000, (the number of men stationed there,) gives one man in every twenty yards. Now, a man standing upright occupies an area of about one square foot on the ground, therefore nine men would cover a square yard, and consequently one hundred and eighty men twenty square yards; or, which is the same thing, each man of the guard of the trenches stands upon $\frac{1}{180}$th part of twenty yards, and the 3,000 men forming that guard upon $\frac{1}{180}$th part of the 60,000 yards assumed as the space over which they are spread. He next imagines only six mortars to be used from the front attacked, and that their calibre is twelve inches. A mortar of this description throws a shell weighing one hundred and fifty pounds, and would consequently project four times that number, or six hundred, of four ounce balls. The six mortars would therefore throw six times six hundred, or 3,600 four ounce balls, at every discharge; and, as the 3,000 men composing the guard of the trenches occupy the $\frac{1}{180}$th part of the space on which these missiles fall, one ball in every one hundred and eighty must take effect, or (dividing 3,600 by 180) twenty men will be put *hors du combat* at every salvo of the six mortars. But each mortar can easily fire one hundred rounds in twenty-four hours, so that twenty times one hundred, or 2,000 men, will be disabled per diem, and, of course, ten times that number, or 20,000 (the whole besieging force) in the ten days calculated upon as likely to pass over between the third parallel and the opening of the breaches.

The mortar-batteries, by which this process of extermination is to be carried on, are situated at the foot of the exterior slope of the rampart, and he considers them to be most effective in the direction of the capitals. They are in casemates (each containing a single mortar,) ten feet high, ten feet broad, and twenty feet long, with the floor on the horizontal level of the ground. He at first left their

front open towards the counterguard, but afterwards, instructed by experiment, covered them by a detached wall in front.

In aid of the vertical fire of four ounce balls and stones is to be used a fire of muskets held at an elevation so that their balls may reach the ground in the manner of shells. He also recommends that two hundred cross-bow men should fire each one arrow per minute, of which, as before, one in one hundred and eighty taking effect, would, in ten days, disable 16,000 men.

Sir Howard Douglas, in criticising Carnôt's mode of defence, points out that he has overlooked the effect of terminal velocity, and hence has greatly exaggerated the effect of his vertical fire. He also refers to experiments by which it was found that four ounce balls only penetrated one twentieth of an inch into deal board, and from two to three inches into meadow-ground. He concludes that only one in seven hundred and twenty of the shots would strike an object, and that against these a leathern cover for the head and body would be a sufficient protection.

Experiments were made at Woolwich, in August, 1824, for the purpose of ascertaining whether it would be practicable to thrown shot or shell over this counterguard of Carnot's, so as to strike the detached wall behind it sufficiently low down to open a practicable breach. With this view, a brick wall was built, six feet thick at top, seven at bottom, and twenty-one feet high, strengthened by counterforts four feet square. In front of the wall was raised an earthen mound of the same relief and profile as Carnot's counterguard, while in its rear a second mound was constructed to represent his bastion, but eight feet lower than the dimension assigned by him; the latter departure from the author's system being merely an expedient to economise labor, as in all respects it was otherwise clearly favorable to Carnôt's defences, and in the same proportion unfavorable to the experiment.

The wall was allowed to stand for a year, that the masonry might have time to settle, and was then battered by eight 68-pound corronades, and six howitzers, carrying from eight to ten inches calibre—the former five hundred, the latter four hundred yards from the crest of the counterguard. The carronades fired two hundred and fifty rounds of solid shot, the howitzers two hundred and thirty-five live shells, both at an elevation of 15°. The result was, that after eleven and a half hours' firing, the wall was one confused heap of rubbish, perfectly practicable as a breach, although rather steep near the foot.

An idea seems to have gone forth, that the wall which formed the subject of the above experiment was only just built, whereas it is beyond a doubt, that it had been constructed, as already mentioned, for a full year previous to the date above given. Not only might the destruction of such a detached wall, however well settled its masonry, be confidently anticipated, but that result would seem to be a natural consequence of the attendant circumstances and conditions.

On examining a section of the detached wall in question, with its counterguard in front and bastion in rear, it will be seen that shot, to pass over the counterguard and strike the wall at its foot, must meet the latter at an angle of about 25°, and of course at a still greater angle in proportion as the contact takes place higher up than the foot. Now, from the breaching experiments at Metz, in 1834, (although not so complete as could have been wished,) there seem just grounds for concluding, that we may batter in breach with a charge of one-half the weight of the ball, (probably the best proportion for breaching,) at any angle not below 25° to 30°. If this hold good, when the angle of inclination lies in a plane horizontal, or nearly so, there is still greater reason for concluding that it will take place likewise in vertical planes, as in the Woolwich experiment; not forgetting, however, that the trials at Metz were from the crest of the glacis or covert-way, and consequently distant from the scarp to be battered only from seventy to one hundred and four feet, while Sir Alexander Dickson's batteries at Woolwich were distant, the guns five hundred yards, the howitzers four hundred yards, from their object. Moreover, shot projected in vertical planes lose the advantage of cutting a horizontal groove, so as to detach the upper part of the revetment from the lower, as in the received mode of breaching; nor will the comparative uncertainty of the pitching fire, directed as it is against a hidden object, permit vertical grooves to be cut. Altogether this method of projecting shot and shells seems well calculated to fulfil its purpose, and may be considered an agent of the attack as powerful as it is novel. It offers great prospect of success against walls detached from the ramparts in the manner of Carnot, and perhaps equally so against concealed casemates, previous to forming a lodgment on ground exposed to their fire.

It would be interesting to inquire how far the pitching fire is likely to be effective, when directed against a common scarp wall, protected by a counterguard or other work—such, for instance, as one of Cormontaingne's—supported by earth behind and good counterforts. Certain it is that masonry so supported offers a resistance to 8-inch shells, even when thrown from the crest of the glacis, so great as to break them to pieces at ordinary charges; while, in reducing the charge, the impression produced on the wall is so trifling as to be very nearly null. Would this be the case with 10-inch shells thrown from four hundred yards, as in the Woolwich experiment? Again, at Woolwich there was full power of correcting the charge and elevation for each successive shot, by the observed experience of preceding ones. Now, how far will it be possible to obtain the true direction of the pieces against a hidden object to which there is no access, and the precise distance of which is not known? or to what degree will it be practicable to regulate those conditions by the intervention of a third party observing the effect of the first shots from a neighboring steeple, or height, whence his view can plunge into the interior of the works, and see the escarp to be battered?

Choumara, a captain of French engineers, whose work was published in 1827, is the latest writer

whose ideas are likely to have any influence upon the permanent fortifications of modern Europe. He establishes a valuable principle, which, although it may have been partially developed by older writers, he is, nevertheless, the first to bring forward in a distinct, simple, and tangible form. It is, that the fortifications of a place ought to be classed under two heads; the one, permanent and unchangeable, consisting of the reveted scarps and counterscarps; the other, variable and capable of modification, comprising the covering masses or parapets. So that the permanent part, together with the ground submitted to its influence, is to be considered as the field of battle, while the parapet may be infinitely varied in direction and shape, to meet the progress and position of the besiegers, in nearly the same manner as so many lines of troops. Thus, while his escarps are preserved straight, so as to be flanked throughout, he refuses the faces to ricochet by curving the parapets, or wheeling them back, so that their prolongations shall fall within the demilune. This change of direction causes a vacant space between the cordon of the revetment and the newly aligned parapet, which he fills with musketry as the attack approaches the crest of the glacis; while, in order that it may not be enfiladed from thence, a thick traverse is placed at the saliant. This seems too important a principle to be lost sight of, and may possibly yet be acted upon in future constructions or modifications.

Choumara follows Vauban, Carnot, Dufour, and Jones, in recommending the restoration of the ancient chemin des rondes; for he is virtually advocating the readoption of that work, in combination with some peculiarities of the faussebraie, when he proposes that the present parapet should be thrown back a distance equal to one half the height of its escarp, and a covered terreplein formed at the foot of its exterior slope, the plongée of whose parapet should terminate at the cordon of the revetment. From hence a fire of musketry, which he anticipates will be extremely formidable, will be directed into the breaching and counter-batteries. He may be said to restore the chemin des rondes, as regards the height of escarp; but to invest it with the character of the faussebraie, by increasing the breadth of terreplein, and covering that terreplein by a parapet of earth in lieu of a masonry wall.

It is by no means certain, however, that a brisk fire of shells, directed upon the space between the two parapets, would not render it untenable for his musqueteers, as soon as the besiegers judged its fire to be seriously inimical to their further progress; for the high parapet behind them may be conceived to place the defenders of this faussebraie, or chemin des rondes, in the dangerous predicament of parties sapping down hill towards their point of attack, when the shells which pass beyond the approach are either intercepted by the rising ground behind, or roll back and burst in the trench.

There is to be a traverse of great height and breadth along the capital of the bastion, casemated underneath, and intended, on the one hand, to defi lade the retired parapet, on the other, to contain the guns of the work at such times as the vehemence of the besiegers' fire either threatens their demolition or prevents them from being worked.

Acting upon the general principle explained at the commencement, he wheels back, as it were, a portion of the parapet of each face, so as to place the breach at the saliant between two direct fires; and, with a similar object, constructs a raised parapet at the shoulder looking towards the breach, while it answers the double purpose of a cover to the artillery of the flank.

He lengthens the flanks of the bastions towards the interior by a distance about equal to the length of the counterbatteries, which would seem to be an useful arrangement; and he points out, what had escaped Cormontaingne's notice, that the shoulders of each bastion are liable to be breached from the counterbatteries at the saliants of the next, because the tenaille does not project sufficiently to cover those points effectually.

Desirous to obviate the ruinous facility hitherto possessed by the besieger, of breaching each work in succession from that already gained, he greatly extends the idea brought forward by Turpin, Bousmard, Chasseloup de Laubat, and Haxo,* protecting the whole of his escarps by a glacis in the ditch, the crest of which has generally the same relief as the cordon of the revetment it covers.

He follows his predecessor in producing the length of the exterior side of the polygon to four or five hundred yards, and gives it as his opinion that there is little danger in exposing the upper part of the masonry of the escarps, provided that its destruction by distant batteries shall not cause a practicable breach, and that proper care be taken to throw back the parapet, so that it may not come down at the same time as the wall in its front.

On the subject of retrenchments he applies the proposition long since promulgated by Durer and Rimpler, and more recently by Virgin, that each bastion should be placed in a condition to hold out as a separate fort after the rest have fallen; and attempts to accomplish this by building a front of fortification across the gorge, looking *towards the place*. As soon as the direction of the attack is clearly ascertained, working parties are immediately employed in the bastion or bastions embraced thereby, and reverse the front of fortifications, so as to make it face the saliant, thus constituting a retrenchment of the common form.

These, with the addition of some well-conceived suggestions for preparing the houses of a town so as to contribute to its last defence, are the principal improvements recommended by this writer. Although, perhaps, possessing little general novelty to recommend them, they are laid down with clearness, applied with intelligence, and argued with a degree of candor which command our attention; and his book claims a deserved place in every military library.

If we now take an impartial view of those modifications which form the subject of this and the preceding chapter, and which are chiefly grafted upon those of Vauban and Cormontaigne, we are bound to

* General Haxo, who commanded the attack on the citadel of Antwerp, as Chief of the Engineers.

admit that they are nearly all of more or less importance. Applied with discrimination to the infinite varieties of soil and situation, they have each a tendency to prolong the duration of sieges; and since a single day added thereto may bring with it the anxiously-expected relief, and save the fortress, nay, the country itself, it is fair to conclude that, involving no inordinate expense, and calculated to lengthen the defence by some days, they are judicious moves, on the weaker side, in that great game which forms one of the most legitimate studies of the scientific soldier.

We should be blinding ourselves to the truth, however, were we to infer from hence that the fearful odds are removed, or that balance restored between the attack and defence which, deranged in the first instance by Vauban's masterly combinations, has been since still further overturned by the continued improvement of all kinds of projectiles, their lavish use, especially of those for vertical fire, the increased strength of powder, and the general advance of knowledge. We give below an abridgment of Carnot's statement of the principal disabilities under which he considers the fortifications of our time to labor, and it will be found that, if tried by this not unreasonable ordeal, the strongest systems hitherto devised by the mind of man will prove wanting.

1. The want of cover for the garrison and their artillery against the concentrated fire to which they are exposed.

2. The inadequacy of the interior works or retrenchments to stand an assault, and save the inhabitants from pillage.

3. The difficulty of making prompt offensive movements in force, in consequence of the defective communications between the place and its outworks.

4. The many admitted defects and weaknesses of the covered way.

5. The imperfect cover afforded by the ravelin to the shoulders of the bastions.

6. The exposure of the escarps.

7. The want of fire along the capitals of the saliants to oppose the besiegers' approaches.

8. The fall of the parapet at the same time as the revetment.

9. The action of the weather on the masonry of the works.

10. The deficiency of shell-proofs to shelter the garrison, ammunition, &c., &c.

11. The quantity of wood needed for palisading, &c.

12. The severe and continued labor required from the garrison.

France.—According to an official statement of November last, the army was thus constituted, viz: 10 marshals of France; 74 lieutenant generals; 135 *maréchaux de camp*, or major generals; 1,730 colonels; 234 military *intendants*, (inspectors?) 211 general officers competent for service, (*en disponibilité*:) making, in all, 2,394 superior officers, who form the general staff of the forces. Furthermore, 430 *employés* of the Central War Office; 15,622 of gendarmerie; 210,453 infantry; 58,294 cavalry; 29,624 artillery; 8,309 engineers; 6,593 of the train; 4,956 veterans; 4,334 of the foreign legion in Africa. The whole number, therefore, if we include 1,525, who are not serving with any distinct corps, and 1,696 employed in the civil department of the force in Algiers, amounts to 341,606 effectives, who are equipped and kept together at an annual charge of £11, 836,400, or 295,910,000 francs; while the sum spent on public instruction is but £660,120, and on the Department of Justice £815,760. Verily, an "armed peace" is a costly affair.

The *navy* is composed of 28,230 officers and seamen, 16,178 marines, and 4,125 marine artillery; forming a total of 48,523, besides 201 persons employed in the civil department. The charge for the year is estimated at £3,772,920, or 94,323,000 francs.

SUBMARINE PROPELLERS.

[illegible]cham Manor House, New Cross,
April 24, 1843.

Mr. Editors: The experiments mentioned in the House of Commons by the honorable Secretary of the Admiralty, on the 3d ult., as at that time being made, in order to test the relative merits of the several sub-marine propellers which had been deemed worthy of a Government investigation being now ended, I beg leave to forward you a short notice of the result.

The propellers selected for trial were Blaxland's, Smith's, (the Archimedean screw,) and Ericsson's; the vessel in which they have been tried is H. M. steamer Bee, and the place of trial the Government mile at Longreach.

The Bee is a small sea-going vessel, I believe only of thirty-four tons burden, built for, and now serving as the tender to the Excellent, gunnery-ship, at Portsmouth. She is fitted with a single engine of ten horse power, and with paddle-wheels, in order that the officers under Sir Thomas Hastings, at the naval school there, may, through her, be instructed in the science of steam navigation. Her lines are particularly unfavorable to a stern propeller.

The following is the result of the trials as regards speed and weight:

	Speed. Miles per hour.	Weight of the propeller. cwt.	qrs.	lbs.
Blaxland's, - -	7.1152	0	2	3
Smith's, - - -	6.8	2	0	7
Ericsson's, - -	5.47	3	0	11

The speed attained by the Bee when propelled with paddle-wheels is 7.7 miles per hour; but it should be remarked that she was laid down expressly for them, and that consequently her engine is placed longitudinally, which position renders necessary the use of bevelled wheels, at a considerable loss of power, to communicate the action to the propeller. It should also be remarked that a *single engine* takes as much from the speed of a stern-propeller as it gives to the speed of the wheels, and that when the Bee is moved by the propeller she is encumbered by her wheels and their boxes. It is true that her wheels are partially disconnected from their shaft, so that they cease to revolve, and that such of their floats as would otherwise dip in the water are unshipped, but still the shaft revolves within the hollow shafts of the wheels, and is pressed down upon its bearings by the weight of the wheels.

These considerations alone are sufficient to account for the difference of speed between the paddles and Blaxland's propeller. There is, however, another.

The draught of a vessel for a sub-marine stern-propeller should be great. The absence of this essential most seriously affected Blaxland's propeller in the Bee, as its diameter was there confined to the diameter of the screw. The draught of the Great Northern, so the papers inform us, is seventeen feet, whilst the diameter of her screw propeller is no more than twelve feet. If Blaxland's propeller was fitted to her, its diameter would be restricted only by the limits of the draught; and Blaxland's invention is enabled to take advantage of this enlarged diameter, so important to the speed of a sub-marine propeller, by the circumstance that its arms can be extended to any length without increasing the surface of their blades. This is one of its peculiarities; another is to be found in the application of its stuffing box to a bearing, for it has no outer journal or carriage, and therefore no danger can accrue to it on the ship's heel taking the ground. The length of the screw in the Bee is two feet, the length of the opening in the dead-wood required by Blaxland's propeller in the same vessel is only ten inches, and the length of its boss is only four inches.

The propeller invented by Mr. Blaxland offers yet other advantages over the screw; it is much less expensive to manufacture, for it can at any time be made by the ship's engineer at sea; it requires *a smaller multiplication of its engine's speed*, and being driven by adhesive drums and bands, instead of cogged wheels and pinions; it is unattended by *noise* and vibration. The efficiency of the speed apparatus (which has also been patented by Mr. Blaxland) has been particularly remarked upon by the officers who made the trials in their official report to the Admiralty.

I have only further to add, that since the termination of the Government trials, the Lords of the Admiralty have ordered Mr. Steinman to lay before them drawings showing the adaptation of Mr. Blaxland's invention to a frigate of eight hundred tons.

I am, &c., F. COLLIER CHRISTY.

An Iron Harbor.—It is said that many of the iron-masters are sustaining a loss of from 25*s*. to 30*s*. upon every ton of bar iron now sold at the current rate of the market, namely, £4 per ton, and that they are only prevented from "blowing out" a great many of their furnaces by a desire to keep their work-people a-going. In this state of things, there is a proposition, which finds favor with some of the leading iron-masters, and there is a probability of a meeting being convened at the Universal Hall of Commerce, to take the subject into consideration. Mr. Bush, the engineer, has submitted plans to the shipwreck committee of the House of Commons, now sitting, for the construction of a harbor of refuge upon the Goodwin Sands, either on account of Government, or by a private association of capitalists, to be endowed with certain privileges. The leading feature of the plan is the immense consumption of iron which its adoption would necessitate. It is proposed, first, to commence with half a mile of embankment, and this alone would require for its completion thirty-five thousand tons of iron, which, at £5 per ton, would give £175,000. Should the whole plan be carried out, for the embankment of rather more than eleven miles, about eight hundred thousand tons would be consumed, seven thousand men would be employed weekly for eleven years, and £4,000,000 sterling be thrown into the iron trade alone.

The cost of a cubic foot of iron and concrete is 1*s*. 4*d*, being less than half the price of stone, and the working of a ton of iron gives employment to five men per week. Each caissoon, according to the scale submitted to Parliament, would be one hundred feet long, fifty-four feet high, and thirty-six feet at the base, and to diminish one foot in six. It would contain 172,800 cubic feet, and would weigh 1,300 tons of iron, when floated off to its destination to form the embankment wall, and would be filled with concrete; each caissoon, when complete, weighing upwards of 13,000 tons. Weighty as this project is, we fear that it is somewhat visionary withal. The Thames tunnel would sink into insignificance before the blocking out of the sea from the Goodwin Sands by an iron embankment. But we live in an age of wonders.—*Birmingham Gazette.*

Launch of the Infernal Steam Frigate.—*Woolwich, June* 1.—This beautiful first-class steam-frigate was built on the same slip in the dockyard as her sister, the Devastation, which has given such great satisfaction, owing to her seaworthiness and other qualifications, and was launched at 3 o'clock yesterday afternoon. The following are the dimensions of the Infernal: Length between the perpendiculars, one hundred and eighty feet; length of keel, for tonnage, one hundred and fifty-six feet four and three-fourths inches; extreme breadth, thirty-six feet; breadth for tonnage, thirty-five feet eight inches; breadth moulded, thirty-five feet; depth in engine-room, twenty one feet; burden in tons, old plan 1,058, new plan 1,027.

The 83d regiment British army has sailed from Quebec for England. The Quebec Gazette states that within thirty days from the date of the order from the horse guards, recalling the regiment, they were embarked and under sail for home.

Antarctic Expedition.—Her Majesty's ship Erebus, commanded by J. C. Ross, and Terror, commanded by F. R. M. Crozier, arrived in Simon's bay, Cape of Good Hope, on the 4th of April, from the Antarctic regions, having obtained the latitude of 71° 30′.

Temperance.—Baron Larry, Chief of the Medical Staff of the French army, has stated it as a fact, that the six thousand survivors who safely returned from Egypt, were all men who abstained from the use of ardent spirits.

Percussion Locks.—The introduction of percussion locks into the Prussian army has been finally decided upon. The regiments of guards, and the 7th and 8th corps of that army, will be first supplied with them.

FRENCH ACADEMY OF SCIENCE.

M. Arago made his promised communication relative to the eclipse of July 8th, as observed by him and other astronomers, provided with all the necessary instruments, at Perpignan. The report previously made to the Academy of Sciences of Toulouse, and the accounts which had been received of the observations at Marseilles, and in different parts of Italy, had but served to increase the anxiety of scientific men to hear the report of M. Arago, for it was expected that would add new information, and enable them either to reconcile the conflicting accounts of other astronomers, or to establish a kind of standard by which to appreciate the weight due to each. M. Arago began by stating that the object of himself and the gentlemen associated with him in the observations at Perpignan, was not so much to verify the accuracy of the calculations as to the precise moment at which the eclipse was to occur, as to determine as far as possible some undecided notions as to the nature and character of the heavenly bodies on which our earth depends for heat and light; but, being provided with the means of ascertaining the exact moment of the eclipse, they did not, of course, neglect to record it. M. Arago expressed his surprise at having seen it stated by some observers that the phenomenon occurred precisely at the time predicted; for, according to him, it did not take place until from thirty to forty seconds later than the prediction. This error of calculation, he observed, might appear to many to be too trifling to deserve notice, but, in his opinion, it was inconsistent with the progress made in astronomy, and it would be necessary, for the honor of the science, to trace its cause, and prevent its repetition. The learned academician then proceeded to communicate the result of his observations on the halo which appears to surround the moon after the entire disappearance of the sun, and which modifies the darkness occasioned by the eclipse. Plutarch says: "The moon, in an eclipse of the sun, allows a portion of the sun's light to extend beyond her own edges, and thus total darkness is prevented." The lunar halo is more particularly described by Plantade and Clapiés in their observations of the eclipse of 1706." "As soon as the sun was wholly eclipsed," say they, "the moon appeared to be surrounded by a very white light, forming round the disk of that planet a halo three minutes in width; within this limit the light was the same throughout, gradually failing, and at length dissipating itself in darkness." The width of this luminous appearance, however, varies according to the eclipse. In 1719 Halley found an extent of two minutes and seven seconds; in 1806 the observation of an astronomer in America gave six minutes. At Perpignan, on the 8th of last month, the width was three minutes and thirty seconds, and it did not vary during the different phases of the eclipse. M. Arago had recommended to his colleagues to make it an important point to ascertain whether the halo had its centre on the sun or on the moon, the existing opinions on this question being of a conflicting nature. Halley and Lonville have affirmed that the centre of the halo coincided with that of the moon; whereas, according to Maraldi and Ferrer, the centre is always that of the sun. The astronomers of Perpignan report that the opinion of Halley and Lonville is the correct one. They measured the luminous coronet with the greatest care, and found it equal on both sides, which led them to conclude that the white aureola which extends beyond the obscured body of the moon is not produced by the sun's atmosphere, and is simply a phenomenon of luminous diffraction. The serpentine lights observed on the surface of the moon in 1715, by Halley and Lonville, and which the latter regarded as lightning arising from storms in the atmosphere of the moon at the moment of the eclipse, were not seen at Perpignan. Some meteors, or shooting stars, were, however, observed. It is not improbable, therefore, that the serpentine lights noticed by Halley and Lonville were meteoric appearances brought by chance over the perspective of the superposed bodies. The Toulouse astronomers, in their account of the eclipse of July 8, state that they had observed a luminous opening in the edge of the moon, about forty seconds before the end of the eclipse, and they assign to it an extent of one hundred and fifty-six leagues. A similar observation was made by Admiral Ulloa in 1778. The luminous point which he perceived on the northwest portion of the moon was, according to him, one hundred and nine leagues in length, being a narrow opening or perforation of our satellite, admitting a small portion of the sun's light. M. Arago, without absolutely denying the existence of this opening, states that in the observations at Perpignan there was nothing to confirm it. During an eclipse the moon is designed in black upon the sun, in its true form. The region of the sun which remains visible is, therefore, limited by two portions of circumference. In the points in which they meet, these two arcs, one dark, the other luminous, form two curvilinear lines, which are called *horns*, and which are sometimes very thin and sharp. The luminous rays of the sun, which define clearly even the summit of the horns and surrounding parts, cross the surface of the moon to arrive at the earth. This preliminary description introduces some remarks by M. Arago on the important question as to a lunar atmosphere. If, says this gentleman, the moon had a sensible atmosphere, these rays would deviate, the circular form of the sun would be affected, and the horns would show inflections and irregularities. Nothing of this kind was seen at Perpignan. It was only at rare intervals that the horns appeared mutilated, and they were never so completely. The observations on the bright spots of the sun led the astronomers of Perpignan to the same conclusion as to the non-existence of a lunar atmosphere. When the edge of the moon, during the eclipse, passed a solar spot nearest the black disk of the sun, it had the same luminous intensity as the remainder. This equality of light, says M. Arago, would not have existed if a vapor of any kind, even of no greater extent than the distance of the Luxembourg from the observatory, had surrounded the moon as an atmosphere. The number of stars seen at Perpignan during the

height of the eclipse was only ten, from which we may infer that the darkness was at no time great. The accounts given by the ancient astronomers of the eclipses observed by them are very different. According to them, the darkness in some cases was more profound than that of night, and the stars shone with a brightness which filled the inhabitants of the earth with admiration and astonishment. It would appear, however, by the accounts of other astronomers, who watched the eclipse of the 8th ultimo, that a greater number of stars were visible than that seen by M. Arago and his colleagues. This was particularly the case at Montpellier, and also at Milan, although without the central range of the eclipse. The thermometrical observations of M. Arago are less extensive than many persons could have wished. He is brief in his account of the change of temperature experienced during the maximum of the eclipse. He states, indeed, that the two minutes and a quarter of the total occultation of the sun sufficed to cool the atmosphere to such an extent as to cause an abundant dew to fall upon the trees and plants, which were dripping with wet when the sun again made its appearance; but he has omitted to state with precision the degree to which the mercury fell in the thermometer. M. Lentheric, professor of mathematics at Montpellier, explicitly states that at the commencement of the eclipse at that place the thermometer stood at eighteen degrees centigrade, (about seventy-five Fahrenheit.) At the moment of the greatest obscurity it marked only fifteen and a half degrees, but at the end of the eclipse the mercury rose to twenty. M. Lentheric relates a curious fact as to the termination of the phenomenon. The dazzling effect of the sudden return of the light, he says, was such that he could not at the moment distinguish the hands of his chronometer, and therefore was unable to determine the moment of the event with the precision desired. An interesting experiment was made by the Faculty of Sciences of Montpellier to ascertain the luminous intensity at the different periods of the eclipse. The means employed was the daguerreotype. All the proofs gave a sufficiently defined image of the phenomenon to enable the members of the faculty to determine by actual admeasurement the relative apparent diameters of the sun and moon. At Toulouse, M. Flangerques not only noted down a fall in the temperature of four degrees centigrade during the eclipse, but also saw the mercury fall in the barometer. The mercury fell to thirty-one hundredths of millimetres below the height at which it would have stood if the difference of temperature had been the cause of the variation. This depression is indeed of itself unimportant, but it nevertheless shows a deviation from the normal action of the barometer; for it is known that this instrument usually goes on rising from the getting up of the sun until nine in the morning, when it attains its maximum. M. Arago, in the course of his communication as to the observations at Perpignan, states that during the latter period of the eclipse he saw on the edge of the black disk of the moon a sort of protuberance of fire two minutes in height, and presenting an appearance like that of the glaciers of the Alps illuminated by the setting sun. At Narbone the appearance was that of a distant light-house. M. Littrow, of Vienna, also noticed this protuberance, and gives to it an extent of five minutes, or the twelfth part of a degree. M. Bouvard, of Digne, distinguished luminous points proceeding from the edges of the moon, but he attributes them to divergent rays. There will naturally be much speculation as to the character of the protuberance noticed by M. Arago. Some members of the Academy have already thrown out the idea of a mountain of the sun rendered visible in the atmosphere of that body. The theory of Herschell is that the sun, which is the source of light and heat to us, and which has been regarded as an incandescent body, is in reality dark and inhabitable. M. Arago, whilst he affirms that the protuberance which he observed is not of the moon—no such discovery having ever been made even with the most powerful telescopes—does not admit that it is a mountain of the sun; not that there is any thing repugnant to the laws of science in supposing the existence of a mountain of the sun 17,000 leagues in height, or, according to M. Litrow's calculation of the extent of the protuberance, 50,000; for objects are only large or small comparatively, and Herschell has shown that the sun, by its prodigious mass, might have mountains even 120,000 leagues in height; but M. Arago's doubts are founded upon the diversity of opinions as to the character of this protuberance. This mountain, if it were one, would have presented a fixed projection and the same angle to each of the observers, which was not the case. M. Arago, therefore, is disposed to regard the phenomenon as one of diffraction. It is proposed, however, to determine this point by experiments with artificial means on the summit of some high mountain. Another curious circumstance mentioned by M. Arago is the following: At about the middle of the eclipse, M. Arago was able to perceive the whole disk of the moon. What was the light which enabled him to do this? It could not be the ash-colored light (*a lumière cendrée*) left by the eclipse, for that is exceedingly feeble. There is, in this fact, a mystery which is perhaps impenetrable in the present state of astronomical science. The effect of the eclipse upon the population of Perpignan, who were watching it, is described by M. Arago as singular, and even affecting. The gravest persons were unable to restrain expressions of joy when the sun re-appeared, and, whilst the eclipse lasted, anxiety was depicted on every countenance. At the foot of the citadel in which the astronomers were making their observations was a regiment of soldiers. They were laughing and full of gaity until the face of the sun was obscured, when suddenly they seemed struck with dismay and stupor. The effect upon animals was so remarkable, that if some portion of what is related did not rest on such good authority it would not be credited. One of the friends of M. Arago had placed five healthy linnets in a cage. During the sudden darkness of the eclipse three of the five died. The oxen formed into a circle with their horns thrust forward, as if preparing for the attack of an enemy. At Montpellier bats and owls left their retreats, and sheep laid down as for the night, and the horses in the fields were in a state of terror. In addition to these facts, it was stated to M. Arago, in the Academy, on the authority of M. Fraisse, a distinguished naturalist, that a swarm of ants in full march stopped short at the moment of occultation.

Domestic Miscellany.

MEMENTO OF THE REVOLUTION.—Gen. Dearborn has communicated the following to the Boston Courier:

"When I entered the room at Concert Hall, on the morning of the 17th, where the members of the Society of Cincinnati were to assemble for the purpose of joining the procession, I found several old soldiers of the Revolution, who had come there by mistake, instead of going to the State House.

"While in conversation with one of the members of the society, I was surprised to hear the notes of a fife in the room, and turning in the direction from whence they proceeded, discovered an aged man, seated among the old soldiers, who was performing on that instrument. I immediately went and took a seat beside him, and listened until he had concluded playing *Washington's March*, when the following conversation ensued!

"Were you a fifer in the Revolutionary army? 'I was.' In what corps? 'Nixon's regiment and Nixon's brigade.' How long did you serve? 'Three years. I was in the campaigns in the Jerseys, and I was present at the execution of Major Andre.' How old are you? 'I am in my 83d year.' Where do you live? 'In Springfield.' What is your name? 'Thaddeus Ferry.' He then played Yankee Doodle, and remarkably well. He had a grandson with him, who appeared to be ten or twelve years old, and who had accompanied his grandfather, apparently, to take care of him, as the veteran was feeble, and so deaf as to render it difficult to converse with him.

"How remarkable that after the lapse of time which had intervened since the close of the Revolution, there should be heard, in the Society of the Cincinnati, on the 68th anniversary of the battle of Bunker Hill, a fifer of Washington's army, playing the march of that illustrious patriot, and the spirit-stirring national air of Yankee Doodle, which had so often cheered the American camp during the glorious struggle for liberty and national independence."

DEATH ON A PILGRIMAGE.—Captain Josiah Cleaveland, of Oswego, New York, was one of the survivors of the battle of Bunker Hill who repaired to Boston to participate in the late celebration. He was by the side of the first man killed in the battle, receiving his death by a cannon ball fired from the Glasgow frigate. Captain C. was a Connecticut volunteer. He served through the war, and having a vigorous constitution, and finding himself strong and lusty at ninety, could not forego the desire of celebrating the completion of the monument to the glorious band who fell on the 17th of June, 1775. The day after the celebration he was attacked by influenza, of which he died at the house of a friend in Charlestown yesterday morning.—*New York Commercial Advertiser.*

IMPROVED STEERING APPARATUS.—Among the many improvements bestowed upon the splendid ship Victoria, one of the most valuable is an improved steering apparatus, by which many of the accidents that from time to time have befallen vessels, in some instances may be averted. The contrivance is very simple, and can be very easily placed upon any vessel. It consists of a strong iron frame, placed upon the rudder head; attached to which frame, and lying fore and aft upon its flat side, is a common coach or elliptic spring; an upright iron spindle (having two wedges or shoulders, of the width of the spring, projecting from its sides) is then inserted between the jaws of the spring and through the plate into the rudder-head. Upon the top of the spindle and projecting aft is an iron quadrant, having cogs upon its aftermost side. These connect with a plate upon the axle of the wheel, on which is a never-ending screw; the wheel thereby acting by the quadrant immediately upon the spindle, which again, by means of the projecting wedges, acts upon the spring placed upon the rudder-head, thus turning the rudder in either direction. The advantages of this method of steering over all others now in use, are as follows: 1. No strain upon the rudder, however great or sudden, can turn the wheel. 2. There can be no parting of steering gear by a sea suddenly striking the rudder. 3. The helm can be shifted in much less time than by any other method. 4. The wheel can be as easily thrown hard down, or up, when the ship is under full way, as when lying at her moorings along side the wharf. It is hardly possible to do the invention justice by a mere description, but these advantages will be readily appreciated by nautical men.—*New York Journal of Commerce.*

AMERICAN LOCOMOTIVES.—At a meeting of the Civil Engineers' Institution in London, some time since, the subject of American locomotive steam-engines was discussed. It was stated that the superiority of the American locomotives was incontestible. In a trial on an inclined plane, an American "Bogie" engine, with a cylinder of twelve and a half inches in diameter, driving wheels four feet diameter, weighing fourteen tons, conveyed a gross load of fifty-four tons up the incline at the rate of twelve miles an hour; while the best of the English engines, with a thirteen-inch cylinder, five feet driving wheels, and weighing twelve tons, drew thirty-eight tons up the incline at the rate of six miles an hour. It was stated that the American engines consumed a greater amount of fuel than the English.

THE UTICA ENCAMPMENT.—This will be one of the finest military displays ever witnessed in our State. Ten highly disciplined and beautifully uniformed companies are to be on the ground. The Light Guards of Hartford, Con., City Guards of New York, Troy Citizen Corps, Schenectaday Artillery, Utica Citizen Corps, Utica Light Guards, Utica Union Guards, Williams's Light Infantry, and the Union Grays of this city.

If we may judge from the encampment here last season on the occasion of the visit of the Utica and Buffalo companies, there will be at Utica an exhibition of military skill and discipline which would do credit to the regular army. We are informed that Captain Barnum, 2d infantry, U. S. A., is to take command, and Lieut. Pitkin, 2d infantry, U. S. A. will act as adjutant. General Wool is also expected to review the troops on one of the days.—*Rochester Democrat.*

WASHINGTON.

THURSDAY, JULY 6, 1843.

VOLUME II.—We but seldom thrust ourselves upon the notice of our readers, nor would we do it now, even upon an occasion so opportune as the commencement of a new volume, were it not that frequent inquiries are made as to our prospects. We have many kind friends who are watching with anxious solicitude the decision of our fate, giving every assurance that if we only sustain ourselves till they are ready, they will come, it may be, with a *fleet*, to our assistance. When the Chronicle shall attain such a character as will make it *desirable* to be numbered among its contributors, they will furnish communications of the highest order, subscriptions in abundance, and whatever may tend to elevate its tone or give permanence to its publication. Kind friends, we are very grateful for your tender care, yet we must give our warmer thanks to those who have kept us afloat while you are fitting out your seventy-fours.

Many, both in the army and navy, have proved themselves friends to the publication, but there must be more, many more, before its permanence can be fully established. It is but seldom that we shall allude to this subject, and when we do, our words shall be few. If the friends of the publication wish it to be firmly established, they must exert themselves. We can only say, that as long as it may be in our hands it shall be published *regularly*. Whether it shall become a *permanent* publication or not, those who ought to be much more interested in it than we, must decide.

An index for the first volume will be published as soon as a good one can be prepared.

THE COURT MARTIAL.

The court which has been so long in session on board the Pennsylvania at Norfolk has got through with all the cases brought before it, and at last stands adjourned *sine die*.

The following are as many of the decisions as we have been able to obtain:

Commander WILLIAM RAMSAY, sentence not confirmed; reported to be five years suspension.

Lieutenant EDWARD M. VAIL, dismissed, July 3, 1843.

Lieutenant CHARLES H. POOR, acquitted.

Passed Midshipman MATTHIAS C. MARIN, suspended for two years.

Midshipman CHARLES T. CROCKER, suspended until December 30, 1843, without pay.

Midshipman ALBERT G. ENOS, suspended until June 30, 1844, without pay.

Midshipman SAMUEL A. MILLER, dismissed June 30.

We hope *all* the decisions, whatever they be, *if according to law*, may stand. This is the great evil that the discipline of the navy has had to contend against—the frequency with which the decisions of courts martial have been set aside, not from any want of legality, but by personal importunities and political influence. The country, for this reason, has become tired of naval courts martial, so much so, that, by some of the leading journals of the day, they have been pronounced a nuisance. This is a mistake; the courts are not to blame; but the power which has brought them into disrepute, by so often setting aside the sentences pronounced by them. Owing to this circumstance, they have lost much of their moral influence, we confess, but shall they be abused for this? Shall offenders go unwhipt of justice because the courts have not been sustained? Look at the Levy, the Latimer, and the Clack cases? There appears to be a sickly, mawkish feeling in the country, with regard to the taking away of their commissions from navy officers, and this feeling has done the public great injury; for had many more been taken away, the navy would have been far better off than it is. We view this commission to officers in the light of a written contract betwen the officer and the Government, which ought of right to be set aside whenever the former fails to fulfil his part of the agreement. The Government says to him in effect, I give you honors and emoluments, rank and standing in society, in consideration of which, you in turn are to perform certain duties, and render such and such services, according to certain rules, called laws, established between us. Now, when the officer, through negligence or ignorance, or wilfulness, or any misjudged or evil motive, fails in the faithful performance of his part of the contract, a part of the agreement is, that he shall be tried by his peers. If, then, these peers adjudge him derelict in his duty, what just cause has he, or his friends for him, to complain if the Government says to him, as one of us, under similar circumstances, would say to an agent employed by us: You have abused your trust, betrayed the special confidence reposed in you, and violated the terms of our agreement; therefore, there is no longer any need for your services. In times of peace like these, the only way in which a high degree of discipline and efficiency can be attained and preserved in either the army or the navy, is to hang over the officers the cold, unshrinking, iron rule of the law, and with the assurance that whensoever or by whomsoever it is trampled down under foot, the offender shall be dismissed, at the least. The country wants the best services of the best men; and now, in these piping times, when there is no war to stimulate and to call forth energies, the standard of qualifications on the part of officers should be raised fully up to the capacities of the country. It should be as

high in each service as the intelligence of the country will admit it to be. And whenever an officer who shows himself incapable, or who is indifferent to his trust, is dismissed from the public service, the public is a gainer, for the chances are that he who comes in his place will do better. If courts were sustained, and the law administered upon these principles, naval courts, so far from being a nuisance, would be the greatest blessing to the navy that could come upon it. If officers, with the written laws before them, will disregard and violate, they should be punished; and what tribunal but that of a court martial should pronounce sentence. So far from being severe, we think the findings of the court are generally too lenient. There is much room for reform in the navy in this matter of courts martial. We should be pleased to see it receiving that attention which from its importance it deserves. We repeat, that the frequency of courts martial of late in the navy, is owing to the fact that their findings have been so little respected, and that as a judicial tribunal they have been so poorly sustained. It affords evidence that the law is badly administered, and that there are a great many offenders against it in the navy, and if the country would be quit of courts martial, it must first get rid of those who violate its laws and trample down the discipline of its navy. Officers of the navy, when they attain to the rank of lieutenant and upwards, are supposed to be intelligent and capable; they occupy a proud position, are well paid, and should be held, because of their superior advantages, to a much more rigid and strict accountability than poor Jack, who often does not know what the law is. An offence which should reprimand Jack, should dismiss an officer. We should be pleased to see only three degrees of punishment for commissioned officers—death, dismissal, and reprimand—every offence that is now punishable with suspension, with or without pay, should be dismissal. Nothing will sustain unimpaired, during a long continuance of peace, the efficiency of a military corps, but rigid laws, faithfully administered. If some fairy queen from the sea were to put on our head a wishing cap, and, as a friend of the service, command us to make three wishes for it, promising to grant them, "whatever they be," the first should be a rigid code of laws faithfully executed.

INCREASE OF THE BRITISH ARMY.—The circular of February last, for the reduction of the British army has been *cancelled*. All the regiments in the service, with the exception of those in India and China and New South Wales, and those having two battalions, are to be augmented from seven hundred and forty to eight hundred rank and file.

ARMY.

GENERAL ORDERS, No. 41. HEADQUARTERS OF THE ARMY, ADJUTANT GENERAL'S OFFICE, *Washington, June* 30, 1843.

The General-in-Chief, in deep sorrow, announces to the army, that official intelligence is just received of the death of a distinguished brother officer, Brevet Brigadier General ABRAM EUSTIS, which melancholy event occurred at Portland, in Maine, on the morning of the 27th ult.

The deceased entered the army, a captain of light artillery, in 1808, in the expectation of the war that was not declared till four years later. In this interval, he made himself a master of his profession: served in that war with honor, and has since borne an important part in many expeditions of difficulty and enterprise, including several recent campaigns in Florida.

In a career of thirty-five years, he uniformly exhibited vigor in command, combined with high intelligence and impartiality, and in all relations, public and private, the sternest and most spotless integrity. No man's word or motives could have been more universally respected.

The army has lost a distinguished light and ornament; the country one of its most patriotic and gallant defenders.

As appropriate honors to the memory of the deceased, the posts of the 6th military department, late under his command, will fire minute guns (eleven) and display the national flag at *half staff* till sundown, the day after this order shall be received by the respective commanders, both honors commencing at 12 o'clock, m. In addition, the officers of the same department will wear the usual badge of mourning for thirty days.

BY COMMAND OF MAJOR GENERAL SCOTT:
R. JONES, *Adjutant General.*

NAVY.

June. ORDERS.

28—Lieut. W. W. Hunter, detached from the command of the steamer Union, and to superintend the building of an iron steamer at the Washington navy-yard.
Lieut. H. H. Bell, command of steamer Union.
Lieut. J. J. B. Walbach, navy-yard, Boston.
Lieut. E. Middleton and Mid. R. A. Marr, schr. On-ka-hy-e, Norfolk.

29—Lieut. T. W. Brent, navy-yard, Pensacola.
Lieut. Geo. J. Wyche, receiving-ship, Boston.
Lieut. C. B. Poindexter, sloop Decatur, Norfolk.
Purser T. P. McBlair, Baltimore station, *vice* F. A. Thornton, relieved at his own request.
Midshipmen R. D. Minor, P. H. Haywood, and W. W. Queen, sloop Warren, Norfolk.
Mid. J. Seawell, frigate Macedonian.

30—Comm'r Wm. Inman, command of ship Warren.
Lieut. A. Sinclair, command of schr. Phenix.
P. Mid. R. H. Wyman, schooner On-ka-hy-e.

July.

1—Lieut. C. H. Poor, frigate Macedonian.
Lieut. O. S. Glissson and P. Mid. C. St. George Noland, detached from ship Marion, with leave two months.
Purser W. A. Christian, Boatswain G. Wilmuth, Gunner R. S. King, Carpenter J. Overman, and Sailmaker J. Joins, detached from ship Marion, and waiting orders.
P. Mid. G. Colvocoressis, ship Warren, as acting master.
P. Mid. R. A. Knapp, ship Warren, Norfolk.
P. Mid. I. G. Strain, to ship Levant, until arrival at Rio Janeiro, and then leave of absence for two years.

3—Capt. J. Percival, temporary command of ship Franklin.

Lieut. Geo. Hurst, leave three months, having returned from Brazil, sick.

P. Mid. J. F. Stenson, receiving-vessel, Baltimore.

PROMOTIONS.

Lieut. Levin M. Powell, to be a commander from the 24th June, 1843.

Passed Midshipmen to be Lieutenants.

William A. Parker, from the 16th May, 1843.
James D. Johnston, from the 24th June, 1843.

June. APPOINTMENTS.

28—Thomas R. Ware, of Maryland, to be a purser.

July.

1—William Brady, to be a master.

3—Samuel C. Reid, of N. Y., to be a master.

List of Midshipmen who have passed their examination before the Board recently convened at Philadelphia, in the following order of merit.

No. 1. Archibald McRae,
2. Robert H. Wyman,
3. Edward A. Barnett,
4. Nathaniel C. Bryant,
5. George B. Balch,
6. Jona M. Wainwright,
7. George W. Hamersley,
8. Foxhall A. Parker,
9. Isaac G. Strain,
10. Egbert Thompson,
11. Robert Townsend,
12. Joel S. Kennard,
13. John Wilkinson,
14. John Guest,
15. William H. Montgomery,
16. Donald McN. Fairfax,
17. Robert H. Getty,
18. Isaac N. Briceland,
19. Henry Rodgers,
20. John M. B. Clitz,
21. John D. Read,
22. Courtlandt Benham,
23. William A. Henry,
24. William F. De Jongh,
25. Colin S. Throckmorton,
26. William H. Thompson,
27. John F. Abbott,
28. George H. Cooper,
29. Bayse N. Westcott,
30. William W. Polk,
31. John F. Stenson,
32. Andrew Bryson,
33. John Downes, jr.,
34. Charles M. Morris,
35. Andrew J. Drake,
36. James H. Spotts,
37. James M. Duncan,
38. Lardner Gibbon,
39. Robert A. Knapp.

Naval Intelligence.

U. S. VESSELS OF WAR REPORTED.

Ship *Marion*, Lieut. Commd'g T. W. Brent, arrived at Boston, on Monday, June 26, to be laid up.

The U. S. brig *Oregon*, which has been engaged for some months in the survey of Tampa bay, and has more recently visited Apalachicola, Mobile, Pensacola, Ship island, &c., to determine the latitude and longitude of those places, is lying at the Balize, for the purpose of making observations there. The *Oregon* will leave in a few days for the north, via Pensacola.

The following is a list of her officers: Lieut. Commanding L. M. Powell; Purser, J. B. Rittenhouse; Assistant Surgeon, W. G. G. Willson; Passed Midshipmen, T. H. Stevens, C. Ap R. Jones; Midshipman, C. M. Fauntleroy; Captain's Clerk, T. M. Conrad; Master's Mate, F. A. Ward.—*N. O. Bulletin.*

HOME SQUADRON.—Ship *Vandalia*, Comm'r McCluney, with Commodore Dallas and other officers on board as passengers, bound to the Pacific, arrived at Chagres on or about the 1st June, in the short passage of 13½ days from Hampton Roads. The day after arrival, Commodore D. proceeded up the river. The *Vandalia* would remain at Chagres a few days for despatches from the Pacific.

Brig *Dolphin*, Comm'r Knight, last from New Orleans, arrived at Pensacola, June 15.

BRAZIL SQUADRON.—Frigate *Columbia*, Captain E. R. Shubrick, and schooner *Enterprise*, Lt. Comm'g T. J. Manning, at Rio Janeiro, on the 20th May.

Sloop *John Adams*, Comm'r T. A. Conover, at Montevideo, about the 10th May.

Brig *Chipola*, Lieut. Comm'g J. M. Gardner, after having been repaired, sailed again from Rio Janeiro, about the 7th May, for Mozambique, to look after the wreck of the Concord.

PACIFIC SQUADRON.—Store-ship *Erie*, Lt. Comd't Duke, sailed from Rio Janeiro, May 15.

LETTERS ADVERTISED.

NORFOLK, *July* 1, 1843.

NAVY.—Commo. F. A. Parker, 2. Lieutenants R. C. Cogdell, Henry Eld, J. A. Davis, 2; Hunn Gansevoort, 2; —— Harrison, 2; S. S. Lee, O. H. Perry, 2; J. H. Strong, R. L. Tilghman. Doctors E. H Conway, 7; G. W. Codwise, 3; George Maulsby, —— Lawyer, S. C. Lawrason, E. K. Kane. Passed Midshipmen F. Alexander, 2; G. H. Cooper, H. Clemson, Richard Allison, J. M. Duncan, G. W. Grant, W. R. McKinney, J. S. Kinnard, P. U. Murphey, R. A. Knapp, —— Marine, Geo. H. Preble, J. W. Ripley, J. S. K. You, Andrew Weir. Midshipmen H. A. Colborne, J. H. Johnson, A. K. Hughes, W. E. Hopkins, 3; —— Haywood, J. McRoberts, A. J. Lewis, R. D. Price, 2; S. D. Spence, S. Wilcox.

Marriages.

At Newport, R. I., on the 27th ult., Lieut. L. G. ARNOLD, of the 2d regiment artillery, U. S. A., to Miss JULIA MURDOCK, daughter of Captain ALLEN LOWD, of the same regiment.

At Pensacola, on the 15th ult., by the Rev. Mr. GULNARD, Lieut. J. MASON SCARRETT, U. S. Engineer Corps, to IRENE G., daughter of DON FRANCISCO MORENZO, all of that place.

Deaths.

At Portland, Maine, on the 27th ult., Brevet Brigadier General ABRAM EUSTIS, Colonel of the 1st regiment artillery, U. S. A., aged 57.

At Geneva, N. Y., on the 23d ult., Dr. EDWARD CUTBUSH, aged 71, formerly senior surgeon in the U. S. navy, and for many years a resident of Washington.

At the navy-yard, Pensacola, on the 10th ult., NAHUM WARREN, master U. S. navy, aged 59.

At Fort Gibson, May 31st, private JOHN BRYAN, company D, regiment dragoons.